

RECORDS AND DESCRIPTIONS OF NEOTROPICAL  
CRANE-FLIES (TIPULIDÆ, DIPTERA), XIXBY CHARLES P. ALEXANDER  
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The previous instalment under this general title was published in 1944 (JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY, 52: 369-383). Most of the materials discussed at this time are from Costa Rica and Panama, with fewer species from the Greater Antilles and South America. I am greatly indebted to the various collectors for their interest in saving these flies. The types of the novelties are preserved in my personal collection except in the cases of three species from the United States National Museum, sent to me for examination by Dr. Alan Stone, and one further species received from Professor J. Speed Rogers.

Genus *Brachypremna* Osten Sacken***Brachypremna geijskesi* new species.**

Size large (wing, male, over 20 mm.); mesonotum, especially the præscutum, more or less inflated; præscutum reddish brown, patterned with black, these areas especially evident near the suture where they are separated by equally distinct, obscure yellow spots; legs black, the femoral tips, narrow tibial bases and tibial tips whitened, the last broadest on hind legs; basitarsi of fore and middle legs more or less infuscated on proximal third; wings pale brown, patterned with darker brown and cream-colored areas; stigma with pale center; tip of vein  $R_3$  curved at about a right angle into the margin; veins  $M_1$  and  $M_2$  not strongly decurved; male hypopygium with the dististyle expanded at apex into a subcircular head, this further produced into a cultriform blade.

MALE.—Length about 15-17 mm.; wing 20-21 mm.

Head broken. Mesonotum, especially the præscutum, more or less inflated, somewhat as in *quasimodo* but not so accentuated. Præscutum, with the cephalic portion reddish brown, the posterior half with four blackened stripes, these latter near the suture separated by conspicuous, obscure yellow spots that become infuscated in front; further yellow brightenings in humeral region and on the sides of sclerite before the suture, separated by a reddish brown extension to the lateral border; scutum chiefly dark brown, narrowly bordered by more brownish black, the central portion very narrowly testaceous; scutellum obscure yellow, with a brown central marking; parascutella reddish brown, margined in front by blackish; mediotergite with three dark brown longitudinal stripes, the more restricted intervening lines obscure

brownish yellow. Pleura obscure brownish yellow, spotted with dark brown. Halteres with stem reddish brown, narrowly yellow at base, the knob blackened. Legs with coxæ testaceous brown, the outer face, especially of the posterior pair, marked with dark brown; trochanters obscure yellow; femora brownish black, the bases very restrictedly brightened, the tips rather broadly and abruptly whitened; tibiæ black, the base and apex whitened, the former about one-half as extensive as the femoral tip; the amount of white at tibial apex is narrowest (about distal tenth) on fore legs, somewhat more extensive on middle legs, occupying about the distal fourth on posterior legs; fore and middle basitarsi just beyond their bases weakly infuscated for about one-third their length, the posterior pair, with the remainder of tarsi, yellowish white. Wings weakly suffused with brown, patterned with darker brown and cream-colored areas, arranged as is common in the genus; stigma with pale center, lying behind vein  $R_1$ ; tips of veins  $R_{4+5}$  and  $M_1$  broadly seamed with brown, alternating with creamy spots in the centers of the cells; vein  $Cu$ , cord and the veins beyond it, particularly the outer medial field, conspicuously seamed with brown; veins brown. Venation:  $Rs$  relatively long;  $R_s$  very strongly curved to margin, forming a right angle or virtually so; veins  $M_1$  and  $M_2$  not strongly decurved, as in *quasimodo*;  $m-cu$  shortly beyond fork of  $M$ .

Abdomen with somewhat the usual pattern of the genus; basal rings yellow, the posterior portions of the tergites extensively infuscated, including the eighth segment; intermediate sternites with the dark central areas longitudinal, more pointed outwardly, on outer sternites becoming much shorter; hypopygium with proximal ends of basistyle darkened, the outer third abruptly pale; dististyles infuscated. Male hypopygium with the dististyle of distinctive conformation; outer spine acute at tip which is directed strongly distad; apex of style dilated into a subcircular head that is further produced into a cultriform blade, the apex very obtuse; before the rounded apex on disk of blade with about 25 circular pores, each with a very small conical peg; in other similar species, including *quasimodo*, the pores and their spines are much larger and placed closer to outer margin of style.

Holotype, ♂, Brownsberg, Surinam, altitude 400 meters, September 19, 1938 (Geijskes). Paratype, ♂, Litanie, Surinam, July 12, 1939 (Geijskes).

I take great pleasure in naming this interesting *Brachypremna* for the collector, Dr. D. C. Geijskes, who has added so materially to our knowledge of the insects of Dutch Guiana. The fly is most similar to species such as *B. diversipes* Alexander, differing in the details of coloration of the body and legs, in the venation, and in the somewhat inflated præscutum. This latter character slightly suggests the more accentuated condition to be found in the otherwise entirely distinct *B. quasimodo* Alexander. The male hypopygium is different from all other species of the genus in which this sex is known.

Genus *Tanypremna* Osten Sacken***Tanypremna (Tanypremna) elegantior* new species.**

Size large (wing 15 mm.); thorax uniformly orange-yellow, polished, without pattern; head above orange-yellow with a major brownish black area on the vertex; legs dark brown, the tarsi black; wings with the basal two-thirds bright yellow, particularly the prearcular and costal fields, the distal third more obscured, at the apex distinctly darkened; veins glabrous; *Rs* longer than  $R_{2+3}$ ; cell *1st M*<sub>2</sub> large and subquadrate, nearly as wide as long; cell *2nd A* wide; abdomen yellow, the tergites extensively infuscated medially.

Sex?—Wing 15 mm.; antenna about 1.3 mm. Abdomen broken beyond the sixth segment, the total length probably about 19–20 mm.

Frontal prolongation of head yellow, very short, a little longer in the region of the stout, broad nasus; opposite the lateral portions, the length much shorter; dorsum of prolongation with abundant long black setæ; mouthparts black; palpi brownish black. Antennæ short, 13-segmented; basal flagellar segment oval, narrowed at base, the outer segments becoming long-cylindrical, with long conspicuous verticils. Head above orange-yellow with a major brownish black area on vertex adjoining the margin of eye, chiefly on the posterior vertex, very narrowly interrupted at the midline, prolonged backward on the orbits; head beneath and on front paler yellow.

Thorax uniform orange-yellow, without markings, the surface glabrous, polished. Halteres with stem yellow, knob infuscated. Legs with the coxæ and trochanters yellow; femora dark brown, narrowly yellow at base; tibiæ dark brown, the tips very narrowly blackened; tarsi very elongate, basitarsi dark brown, the remainder of tarsi passing into black; claws simple. Wings with basal two-thirds or to the general level of the cord bright yellow, particularly in the prearcular and costal fields; beyond the cord the yellow becomes more obscured, at the wing-tip passing into dark brown, this including the outer ends of cells  $R_2$  to  $M_1$ , inclusive, these latter enclosing inconspicuous whitish central streaks; stigma brownish yellow, narrowly margined with brown; very narrow and little-evident brown seams along vein  $R_{2+3}$  and over the anterior cord; veins dark brown, yellow in the more intensely flavous prearcular and costal fields. Veins unusually glabrous, including all veins beyond cord; *Rs* with one or two trichia near base; the only veins with abundant trichia are *C*, *R*,  $R_1$ , and  $Sc_2 + R_1$  as far distad as the free tip of the latter. Venation: Distance on *C* between  $Sc_1$  and the free tip of  $Sc_2$  a little longer than that between  $Sc_2$  and  $R_{1+2}$ ; *Rs* long, gently arcuated, exceeding  $R_{2+3}$ , the latter strongly arched at base; cell  $M_1$  long, widened subbasally; *m* about one-half longer than the petiole of cell  $M_1$ ; cell *1st M*<sub>2</sub> large and subquadrate, the basal section of  $M_{1+2}$  one-half longer than *m*; *m-cu* at near three-fifths the length of  $M_{3+4}$ , subequal to the distal section of  $Cu_1$ ; cell *2nd A* wide.

Abdomen broken at end of sixth segment; tergites orange, brightest at base and on outer segments; dorsum with a broad, dark brown stripe, on outer segments more brightened on sides of basal rings, the latter delimited behind on either side by more impressed areas; sternites yellow.

Holotype, Sex? Probably from Colombia, exact locality unknown (Fred Walker No. 93); University of Michigan, through Professor J. Speed Rogers. The exact data pertaining to this Walker number is not available at this time.

The most similar described species are *Tanypremna* (*Tanypremna*) *carbonipes* Alexander and *T. (T.) hodgei* Alexander, both of which differ conspicuously in all details of coloration of the body and wings and in the venation. From the simple claws, it might be assumed that the present specimen was a female; however, the male sex in *carbonipes* has toothed claws whereas in *hodgei* these are simple in both sexes, so nothing can be affirmed on this basis.

### Genus *Limonia* Meigen

#### *Limonia* (*Rhipidia*) *ingenua* new species.

Allied to *multifida*; mesonotal præscutum chiefly brownish yellow, with three incomplete stripes behind; posterior sclerites of notum and pleura dark brown, the anterior pleurites yellow; legs yellow, the outer tarsal segments darkened; fore coxæ yellow, the remaining pairs brownish black; wings brownish yellow with a restricted brown pattern; *Sc* long, *m-cu* before the fork of *M*; male hypopygium with the tergite strongly emarginate, the lobes fringed with powerful flattened setæ; ventromesal lobe of basistyle and apical lobes of ædeagus small; rostral prolongation of ventral dististyle with two unequal spines, the outer one strong and slightly curved.

MALE.—Length about 5 mm.; wing 5.7 mm.

Rostrum and palpi black. Antennæ broken beyond the third segment; scape black; pedicel and the simple first flagellar segment dark brown (from its obvious relationship with *multifida* and *sejugata*, it may be assumed that the male antennæ will be found to be long-bipectinate). Head dark brown; anterior vertex reduced to a linear strip that is about as wide as a single row of ommatidia.

Pronotum dark brown, the scutellum and pretergites paler. Mesonotal præscutum strongly arched but not pointed, the color chiefly brownish yellow, clearer and somewhat whitish pruinose on sides; three medium brown stripes are indicated on the posterior portion of the sclerite, the median one longer and broader; posterior sclerites of notum dark brown to brownish black, the parascutella paler; sides of mediotergite and dorsal portions of pleurotergite more reddish brown. Pleura chiefly yellow, the pteropleurite and metapleura abruptly brownish black. Halteres yellow. Legs with the fore coxæ and trochanters yellow, middle and posterior coxæ and trochanters brownish black; remainder of legs yellow, the terminal two tarsi segments infuscated; claws with a single erect basal spine. Wings brownish yellow, the prearcular and costal portions slightly clearer yellow; a very restricted brown pattern that consists of small spots that are limited to the vicinity of the veins, as follows:

Origin of *Rs*; fork of *Sc*; cord and outer end of cell *1st M*<sub>2</sub>; small darkenings at ends of all longitudinal veins, largest over the tip of *1st A*; stigma bicolored, chiefly yellow, the outer end, over *R*<sub>2</sub> and free tip of *Sc*<sub>2</sub>, darker brown, conspicuous; proximal end of stigma and a subapical washing in outer radial field paler brown; veins yellow, infuscated in the clouded portions. Venation: *Sc* relatively long, *Sc*<sub>1</sub> ending about opposite two-thirds the length of *Rs*, *Sc*<sub>2</sub> at its tip; *Rs* nearly perpendicular at origin but not angulated; *m-cu* about one-third its length before fork of *M*; cell *1st M*<sub>2</sub> a trifle shorter than vein *M*<sub>1+2</sub> beyond it.

Abdomen bicolored, obscure yellow, the caudal borders of the segments narrowly infuscated, more extensively so on the more proximal segments; a darkened pleural spot on the intermediate segments; hypopygium yellow. Male hypopygium with the caudal margin of tergite with a deep V-shaped notch, the conspicuous lateral lobes fringed with setæ, smallest near the midline, becoming very large and flattened at apex of the narrowly rounded lobes; remainder of tergite virtually glabrous. Basistyle with the ventromesal lobe low and rounded, with about three setæ on the lower or cephalic portion very long and conspicuous, the others short and normal; face of style at base of lobe with a pair of long setæ. Dorsal dististyle a strong, powerful sickle, its tip acute and slightly upcurved. Ventral dististyle fleshy, the rostral prolongation slender, with two very unequal spines; outer spine placed more than its own length before apex of prolongation, short and powerful; second spine slightly more basal, long and straight, about one-third longer than the outer. Gonapophyses with mesal-apical lobe slender, blackened. Ædeagus with apical lobes small and inconspicuous.

Holotype, ♂, Pedregoso, Costa Rica, altitude 2,500 feet, January 1939 (Dean Rounds).

The most nearly allied species are the Mexican *Limonia* (*Rhipidia*) *multifida* Alexander and *L. (R.) sejugata* Alexander. The former has a distinctive coloration of the body and wings, and a very different structure of the hypopygium, including the tergite, basistyles and ædeagus; the latter is much more similar in its general appearance, including the wings and legs, but differs in the structure of the male hypopygium, involving the tergite, basistyles, ventral dististyles, gonapophyses and ædeagus, becoming most evident in the single rostral spine of the ventral dististyle and in the quite different gonapophyses.

***Limonia* (Peripheroptera) cochabambæ** new species.

Size large (wing, male, over 11 mm.); mesonotum yellow pollinose, with three conspicuous brownish black stripes; knobs of halteres blackened; femora obscure yellow, the tips brownish black; wings pale yellow, with a restricted brown pattern; cord in transverse alignment; free tip of *Sc*<sub>2</sub> lying far before *R*<sub>2</sub>; cell *1st M*<sub>2</sub> subequal in length to vein *M*<sub>1+2</sub> beyond it.

MALE.—Length about 8 mm.; wing 11.5 mm.

Rostrum brownish black; palpi black. Antennæ black throughout; flagellar segments suboval, the outer ones becoming more slender and cylindrical; verticles conspicuous. Head yellowish gray, somewhat clearer gray on front; a conspicuous brown area on vertex, becoming a little wider on the posterior vertex.

Pronotum dark brown above, broadly obscure yellow on sides. Mesonotal præscutum with the ground yellow pollinose, with three conspicuous brownish black stripes that are more or less obscured by a faint pollen, the median stripe unusually broad and conspicuous; scutum broadly yellow pollinose medially, the lobes more brownish yellow, darkest on their antero-lateral portions; scutellum and postnotum brownish yellow, more or less yellow pollinose. Pleura brownish yellow, heavily yellow pollinose; cephalic portion of anepisternum and ventral sternopleurite more infuscated. Halteres with stem yellow, knob conspicuously blackened. Legs with the coxæ castaneous; trochanters more yellowed, rimmed with black at apices; femora obscure yellow, the tips rather narrowly brownish black, on the posterior legs involving about the outer tenth, subequal in amount on all legs; tibiæ reddish brown; tarsi passing into black; claws with a single long tooth. Wings pale yellow, the prearcular field, costal border and outer radial field more saturated yellow; stigmal region a trifle more infuscated than the remainder of costal border; a very restricted dark brown pattern, including narrow seams over areculus,  $Sc_2$ , cord, outer end of cell  $1st M_2$ , free tip of  $Sc_2$  and  $R_2$ ; veins brown. Venation: Prearcular region relatively extensive; first section of vein  $R$  a little longer than the second section ( $Sc_2 + R_1$ ); free tip of  $Sc_2$  far before  $R_2$ , vein  $R_1$  more than twice  $R_2$ ; cord transverse; basal section of  $R_{4+5}$  straight; cell  $1st M_2$  long, gently widened outwardly, subequal to vein  $M_{1+2}$  beyond it;  $m-cu$  oblique and weakly sinuous, about one-third its length beyond the fork of  $M$ ; cell  $2nd A$  narrow, the greatest width about twice that of the constricted basal portion.

Abdomen dark brown, more or less yellow pollinose, especially on the sternites; hypopygium brownish black. Male hypopygium with the ventral dististyle large and fleshy, its area about three times that of the basistyle; rostral prolongation relatively small; spines placed close together, straight, subequal to the length of the prolongation beyond their bases. Gonapophyses with mesal-apical lobe slender and gently curved.

Holotype, ♂, Chapare, Cochabamba, Bolivia, November 1934 (Franz Steinbach).

The most similar described species is *Limonia (Peripheroptera) trimelania* Alexander, of Peru, which differs especially in the venation and pattern of the wings.

#### Genus *Helius* St. Fargeau

***Helius (Helius) schildi*** new species.

Belongs to the *mirabilis* group, allied to *miranda*; mesonotum in front broadly yellow, præscutum blackened sublaterally, this color crossing the

suture onto the outer portion of the scutal lobes, the disk of præseutum and scutum obscure brownish yellow; pleura yellow; knobs of halteres orange-yellow; wings yellowish subhyaline, the prearcular and costal portions light yellow; two conspicuous brown crossbands, one postarcular, the second at cord; cell 1st  $M_2$  rectangular,  $m-cu$  only a short distance beyond fork of  $M$ ; abdomen yellow, the posterior portions of the segments brownish black.

FEMALE.—Length about 8 mm.; wing 6 mm.

Rostrum a little exceeding the remainder of head, brown; palpi more brownish black. Antennæ of moderate length; scape and pedicel brown, flagellum yellow, especially the outer segments; flagellar segments passing through oval to elongate-cylindrical, provided with unusually long verticils, especially on the outer segments. Head dark brown, gray pruinose, especially on front and narrow anterior vertex.

Pronotum and the broad cephalic and lateral portions of præseutum yellow, the latter obscure brownish yellow on posterior half, blackened sublaterally, this color crossing the suture onto the lateral portions of the scutal lobes; central portion of scutum obscure brownish yellow; scutellum dark brown; postnotum, including pleurotergite, blackened, the latter restrictedly pruinose on its more dorsal portion. Pleura yellow, sparsely pruinose ventrally. Halteres orange-yellow, especially the knobs. Legs with the coxæ obscure yellow; remainder of legs broken, excepting the basal fourth of a single femur which is clear yellow. Wings yellowish subhyaline, conspicuously crossbanded with brown; prearcular field and costal border conspicuously light yellow; basal dark band post-arcular, slightly more widened at vein  $Cu$ ; outer band at cord, completely traversing the wing from stigma to the posterior margin at  $Cu_1$ , narrowest at and above the fork of  $M$ ; cell 1st  $M_2$  chiefly pale; veins yellow, darker in the banded portions. Venation: Branches of  $R_s$  on their basal half generally parallel to one another; basal section of  $R_{4+5}$  in longitudinal alignment with  $R_s$ , about twice  $r-m$ ;  $m-cu$  only a short distance beyond the fork of  $M$ , this distance not exceeding  $r-m$ ; cell 1st  $M_2$  rectangular.

Abdominal tergites conspicuously banded with yellow and brownish black, the bases of the segments yellow, the remainder darkened; on the outer segments the pale color slightly exceeds the dark; second tergite with an additional darkened basal ring; intermediate sternites more uniformly pale, the outer segments banded as are the tergites; valves of ovipositor very long and slender, yellowish horn color.

Holotype, ♀, Higuito, San Mateo, Costa Rica (Pablo Schild); United States National Museum.

I am pleased to name this interesting species for the collector, Mr. Pablo Schild (Paul Schild), who added materially to our knowledge of Costa Rican insects. The fly is most similar to *Helius (Helius) miranda* (Alexander), of Amazonian Brazil and Peru, differing in the pattern of the body and wings, especially the broad and conspicuous basal wing band and the handsomely patterned mesonotum.

**Helius (Helius) phasmatis** new species.

Belongs to the *albitarsis* group; thorax yellow, the central portion of scutum and mediotergite, together with the scutellum, a very little infuscated; halteres uniformly pale yellow; legs pale yellow, the tarsi extensively snowy white; wings subhyaline, stigma very long and narrow, brown; *r-m* obliterated by fusion of veins  $R_{4+5}$  and  $M_{1+2}$ ; abdominal tergites brown, hypopygium obscure yellow.

MALE.—Length about 7 mm.; wing 7.5 mm.

Rostrum obscure brownish yellow, about as long as the remainder of head. Antennæ relatively short, subequal in length to rostrum, yellow throughout; flagellar segments passing through suboval to elongate-cylindrical, the longest verticils considerably exceeding the segments in length. Head dark brown, sparsely pruinose; eyes large, the anterior vertex reduced to a capillary line that is scarcely wider than a single row of ommatidia.

Cervical region, pronotum and mesonotum yellow, the scutellum, central region of scutum and the mediotergite a very little infuscated; pleura and broad lateral borders of the præscutum and scutal lobes still paler yellow. Halteres uniformly pale yellow. Legs with the coxæ and trochanters pale yellow; femora, tibiæ and most of basitarsi pale yellow, the apex of the last and remainder of tarsi snowy white. Wings subhyaline, cells *C* and *Sc* a trifle darker; stigma very long and narrow, still darker brown; veins brown. Venation: Crossvein *r-m* obliterated by the short fusion of  $R_{4+5}$  on  $M_{1+2}$ , the fusion shorter than the basal section of  $R_{4+5}$ ; cell 1st  $M_2$  large, irregularly hexagonal, the longest faces being the caudal, proximal and cephalic; *m* about one-third the basal section of  $M_2$ ; all veins beyond 1st  $M_2$  much exceeding the cell; cell 2nd *A* relatively narrow.

Abdominal tergites brown, the sternites a little paler; hypopygium abruptly obscure yellow.

Holotype, ♂, Santo Domingo, without exact geographical data, March 1928 (P. A. Ricart); United States National Museum.

*Helius (Helius) phasmatis* differs conspicuously from all other described species of the *albitarsis* group in the yellow coloration of the thorax, as well as in the yellow legs and halteres.

Genus *Oxydiscus* de Meijere**Oxydiscus (Oxydiscus) destitutus** new species.

General coloration of thoracic notum chestnut brown, the præscutum with a darker brown median stripe; wings with a pale brown suffusion; macrotrichia of cells restricted in number; *Rs* strongly arcuated;  $R_{2+3+4}$  elevated, in direct longitudinal alignment with vein  $R_3$ , the fork of cell  $R_3$  asymmetrical; vein  $R_2$  close to fork of  $R_{2+3+4}$ ; male hypopygium with the ventral spines of the aedeagus apparently lacking.

MALE.—Length about 3.6 mm.; wing 4.4 mm.

Rostrum chestnut brown; palpi broken. Antennæ broken. Head dark brown; anterior vertex moderately wide, approximately equal to the transverse diameter of eye as viewed from above.



Pronotum dark brown. Mesonotal præscutum chiefly chestnut brown, the median region darkened to produce a poorly delimited median stripe; posterior sclerites of notum obscure yellow, the scutal lobes weakly darkened; pleurotergite yellow. Pleura brownish yellow. Halteres pale, the knobs weakly darkened. Legs with the coxæ and trochanters testaceous yellow; femora brown, the tibiæ and tarsi a little paler brown; tibial spurs conspicuous; claws elongate, simple. Wings not conspicuously widened, with a pale brown suffusion; prearcular and costal regions somewhat more yellowed; stigma pale brown and very inconspicuous, lying entirely beyond the level of vein  $R_2$ ; veins brown. Macrotrichia of cells restricted to sparse series in central portions of outer ends of cells  $R_3$  to 2nd  $M_2$ , inclusive. Venation: As compared with *costaricensis*;  $Sc_1$  subequal to vein  $R_1$  between the origin of  $R_s$  and  $Sc_2$ ;  $R_s$  approximately of the same length but much more arcuated;  $R_{2+3+4}$  more elevated, in direct alignment with  $R_3$  so the fork of cell  $R_3$  is asymmetrical;  $R_{2+3+4}$  more than one half  $R_s$ ; vein  $R_2$  close to fork of  $R_{2+3+4}$ ; cell 1st  $M_2$  narrower;  $m-cu$  about one-half its length beyond the fork of  $M$ ; vein 2nd  $A$  ending shortly beyond the level of origin of  $R_s$ , bent rather suddenly into the margin. In *costaricensis*,  $Sc_1$  is only a little more than one-half  $R_1$ ;  $R_s$  is only slightly arcuated so cell  $R_1$  is correspondingly narrow;  $R_2$  about its own length beyond fork of  $R_{2+3+4}$ ; fork of cell  $R_3$  symmetrical;  $m-cu$  nearly its own length beyond fork of  $M$ .

Abdomen almost uniformly dark brown, the incisures a trifle paler. Male hypopygium with the dististyles about as in the other regional species of the genus. The paired spines of the ventral plate of the ædeagus, found in the other species, are here apparently lacking; in *acutissimus* and *mexicanus*, these appear as elongate spines.

Holotype, ♂, Pedregoso, Costa Rica, altitude 2,075 feet, January 1939 (Dean Rounds).

The present fly is very distinct from the only other described Costa Rican species, *Oxydiscus (Oxydiscus) costaricensis* (Alexander), differing particularly in the venational features above indicated. The details of structure of the male hypopygium in *costaricensis* are not known to me. From *O. (O.) acutissimus* Alexander and *O. (O.) mexicanus* Alexander, of southern Mexico, the present fly differs most evidently in the structure of the male hypopygium, particularly of the ventral plate of the ædeagus. It is now evident that there are rather numerous species of the genus in mountainous Middle and northwestern South America.

### Genus *Neognophomyia* Alexander

#### *Neognophomyia heliconiæ* new species.

General coloration yellow, the anepisternum and pleurotergite each with a conspicuous black spot; wings subhyaline, the prearcular and costal fields a

trifle more yellowed; a relatively narrow but conspicuous brown band at cord; abdomen yellow, tergites two and three on sides, five and six almost entirely blackened; male hypopygium with tergal spines yellow, very long and slender, especially their hairlike tips; both dististyles small and simple, the inner one narrowly blackened; phallosome a depressed plate, its apex broadly obtuse, with a small median blackened knob or point.

MALE.—Length about 4.5–5 mm.; wing 4.8–5.2 mm.

FEMALE.—Length about 4.8–5 mm.; wing 5–5.2 mm.

Rostrum yellow; palpi with two basal segments yellow, the outer ones infuscated. Antennæ with scape and pedicel yellow, flagellum black; flagellar segments long-oval, the verticils conspicuous. Head yellow; anterior vertex narrow, especially so in male where it is about equal to the diameter of the scape, in female a little wider; posterior vertex with a Y-shaped or triangular depression between its posterior portion and the anterior vertex.

Pronotum light yellow. Mesonotum yellow, the surface shiny, the scutal lobes somewhat deeper in color; pleurotergite with a very large and extensive blackened area. Pleura yellow, with a second circular black spot that occupies most of the anepisternum. Halteres yellow, tips of knobs weakly darkened. Legs yellow; tips of basitarsi and remainder of tarsi brownish black; in some specimens, the fore tarsi more extensively darkened. Wings subhyaline, the prearcular and costal fields a trifle more yellowed; a relatively narrow but conspicuous brown band at cord, widest at costa, narrowed behind, ending at *Cu*<sub>1</sub>; outer end of cell 1st *M*<sub>2</sub> very narrowly seamed with brown; veins brownish yellow, more flavous in the brightened fields, dark brown in the patterned areas. Venation: *R*<sub>2+3+4</sub> varying from about two-thirds to fully as long as *R*<sub>3+4</sub>; vein *R*<sub>3</sub> oblique, *R*<sub>4</sub> very long, terminating at wing-tip; cell 1st *M*<sub>2</sub> short, widened outwardly; *m-cu* from one-fourth to one-half its length beyond fork of *M*; cell 2nd *A* relatively narrow.

Abdomen yellow, tergites two and three with large and conspicuous black lateral areas; tergites five and six, in most specimens, entirely brownish black; in the males with the central portion a trifle paler, forming more or less distinct yellow triangles; sternites, remainder of tergites and the hypopygium of male yellow; in female, the genital segment weakly infuscated. Male hypopygium with the tergal spines yellow, very long and slender, the basal half of each appearing as a narrow blade, the distal half narrowed into an exceedingly slender hairlike point, somewhat as in *productissima*. Both dististyles small and simple, the outer style with about four elongate setæ, one apical in position; inner style relatively narrow, especially on its distal half, the apex subacute, narrowly blackened, the outer surface of basal portion with several long powerful setæ. Phallosome a broad, depressed plate, its apex produced into a small black median knob, somewhat as in *monophora*, but with the lateral shoulders much more conspicuous, the general apex of the plate being broadly obtuse.

Holotype, ♂, Barro Colorado, Canal Zone, April 1940, ex flowers of *Heliconia maria* (Musaceæ); (James Zetek, No. 4645);

United States National Museum. Allotopotype, ♀. Paratopotypes, 3 ♂♂, 10 ♀♀.

In the structure of the male hypopygium, the present species is quite distinct from other related members of the genus. In the pale, exceedingly produced tergal spines, it is most similar to the otherwise distinct *Neognophomyia productissima* Alexander, while in the nature of the phallosomic plate it somewhat suggests species such as *N. monophora* Alexander, but all details of this plate, as well as other structures of the hypopygium, are quite distinct in the two flies.

### Genus *Gnophomyia* Osten Sacken

#### *Gnophomyia* (*Gnophomyia*) *apicularis* new species.

Allied to *tuber*; general coloration of mesonotum brown, more or less pruinose, the præscutum with indications of a slightly darker brown stripe; femora obscure yellow, with a very vague, light brown subterminal ring; wings light brown, stigma scarcely evident;  $R_s$  in alignment with  $R_5$ ; male hypopygium with the mesal face of bastistyle produced into a setiferous tubercle; outer dististyle a relatively short, blackened, paddle-like blade; inner dististyle blackened, its lower apical angle produced into a slender spine; phallosome at apex produced into a diamond-shaped median point.

MALE.—Length about 6.5–7 mm.; wing 6–6.5 × 1.7–1.8 mm.; antenna about 1.8–1.9 mm.

Rostrum and palpi dark brown. Antennæ with scape and pedicel brownish yellow to brown, flagellum brown, the first segment narrowly pale at base; segments subcylindrical, the outer ones shorter; terminal segment long-oval, shorter than the penultimate. Head brownish gray, light gray on the orbits; eyes large; anterior vertex relatively narrow, about three times the diameter of the scape.

Pronotum obscure brownish yellow, more infuscated on sides; pretergites pale yellow. Mesonotum brown, more or less pruinose, the præscutum with indications of a slightly darker brown median stripe, the laterals undifferentiated; humeral and lateral regions of præscutum more yellowed; pseudosutural foveæ reddish brown; posterior border of scutellum narrowly reddened, more conspicuous on sides; lateral border of anterior half of mediotergite and much of dorsal portion of pleurotergite deep obscure yellow. Pleura infuscated dorsally, more reddened on the sternopleurite and meron, the surface distinctly pruinose; metapleura light yellow. Halteres short, obscure yellow, the base of knob very weakly darkened. Legs with the coxæ and trochanters yellow, the posterior coxæ somewhat paler; femora obscure yellow, with very vague indications of a narrow, light brown, subterminal ring; tibiæ and basitarsi obscure yellow, second and third tarsal segments obscure yellow, tipped with darker; outer segments more uniformly brownish black; claws simple. Wings moderately wide, tinged with very

light brown, the prearcular and costal fields light yellow; stigma reduced to a scarcely evident seam along vein  $R_{1+2}$ , not reaching vein  $R_3$  behind; veins brown, more brownish yellow in the basal portions. Venation:  $Sc_1$  ending just before level of  $R_2$ ,  $Sc_2$  slightly variable in position, from just beyond level of fork of  $R_s$  to about opposite one-third the length of  $R_{2+3+4}$ ;  $r-m$  at or just beyond fork of  $R_s$ , the latter in alignment with  $R_5$ ; cell 1st  $M_2$  subequal to vein  $M_4$  beyond it;  $m-cu$  about its own length beyond fork of  $M$  or nearly opposite two-fifths the length of cell 1st  $M_2$ ; cell 2nd  $A$  broad.

Abdominal tergites dark brown, the caudal borders of the sternites more testaceous; hypopygium brown. Male hypopygium with the basistyle short and stout, on mesal face near base with a small setiferous tubercle, somewhat as in *tuber*. Outer dististyle a relatively short, blackened, paddlelike blade, its apex obtuse. Inner dististyle less than one-half the length of the outer, blackened, the lower apical angle produced into a slender beaklike spine, the apex beyond this point strongly produced. Phallosome with apex emarginate, further produced into a conspicuous blackened structure that is more or less diamond-shaped, the apex truncated.

Holotype, ♂, Pedrogoso, Costa Rica, altitude 2,100 feet, January 1939 (Dean Rounds). Paratopotype, ♂.

The most similar described species is *Gnophomyia (Gnophomyia) tuber* Alexander, of Ecuador, which is approximately alike in its general appearance, differing conspicuously in the structure of the male hypopygium, particularly the outer dististyle, inner dististyle and the phallosome.

***Gnophomyia (Gnophomyia) subapicularis* new species.**

Allied to *tuber*; general coloration of mesonotum blackened, more or less pruinose, especially on the posterior sclerites; pleura variegated with black, reddish brown and yellow; halteres brownish black; posterior legs brownish yellow, paler than the fore pair; wings relatively narrow, with a weak dusky tinge;  $Sc_1$  ending about opposite two-thirds the length of  $R_{2+3+4}$ ; abdomen chiefly blackened, hypopygium and ovipositor paler; male hypopygium with a setiferous tubercle on cephalic end of mesal face of basistyle; outer dististyle relatively slender; inner dististyle with lower apical angle produced into a chitinized point.

MALE.—Length about 5 mm.; wing 5.3–5.5 × 1.3–1.4 mm.

FEMALE.—Length about 5.5 mm.; wing 6 mm.

Rostrum light brown; palpi darker brown. Antennæ brownish black throughout; flagellar segments elongate, subcylindrical, shortening very gradually to the terminal ones; verticils subequal in length to the segments. Head blackened, heavily gray pruinose; eyes large and protuberant; anterior vertex broad, nearly five times the diameter of scape.

Pronotum yellow medially, dark brown on sides, pretergites even clearer yellow. Mesonotum almost uniformly black, the humeral region of præscu-

tum slightly more reddened; pseudosutural foveæ black; scutal lobes and lateral portions of præscutum more polished black; median region of scutum, scutellum and postnotum similarly blackened but more pruinose. Pleura with the dorsal sternopleurite and pteropleurite reddish brown, the propleura and anepisterum extensively blackened; ventral sternopleurite darkened; metapleura paling to light yellow; surface of pleura more or less heavily pruinose. Halteres brownish black, base of stem restrictedly brightened. Legs with the coxæ yellow, the fore pair more darkened basally; trochanters yellow; fore legs with femora, tibiæ and basitarsi brownish black, on the other legs paler brown or, on posterior legs, brownish yellow; outer tarsal segments blackened; claws simple. Wings relatively narrow, with a weak dusky tinge; stigma elongate, darker brown; veins brownish black. Venation:  $Sc_1$  ending about opposite two-thirds the length of  $R_{2+3+4}$ ,  $Sc_2$  nearly opposite fork of  $Rs$ ;  $r-m$  variable in position but approximately at the fork of  $Rs$ ;  $m-cu$  usually less than its own length beyond the fork of  $M$ .

Abdominal tergites black or piecous; sternites usually obscure yellow, darkened laterally; hypopygium obscure yellow to light brown. Ovipositor and genital shield brownish yellow, the tips of the cerci narrowly darkened. Male hypopygium with the basistyle stout, the mesal face near cephalic end produced into a conspicuous setiferous lobe, approximately as in *apicularis* and *tuber*. Outer dististyle longer and more slender than in *apicularis*, the apex narrow. Inner dististyle darkened, the lower apical angle produced into a toothlike point; apex of style beyond this truncated, not strongly produced as in *apicularis*. Phallosome narrowed outwardly, the blackened apex produced into four points, two of which are more elongate blackened rods, the remaining pair representing the low outer lateral angles of a ventral median plate.

Holotype, ♂, Pedregoso, Costa Rica, altitude 2,100 feet, January 1939 (Dean Rounds). Allotopotype, ♀. Paratopotypes, 7 ♂ ♀, altitude 2,075–2,100 feet, January 1939.

*Gnophomyia* (*Gnophomyia*) *subapicularis* is most similar to *G. (G.) apicularis* new species and *G. (G.) tuber* Alexander, differing especially in the structure of the male hypopygium, particularly of both dististyles and the phallosome. The tubercle on the basistyle and the tooth at apex of the inner dististyle provide noteworthy characters among the host of allied and generally similar forms.